

PROJECT NUMBER: 1752  
PROJECT TITLE: Optical Spectroscopy of Tobacco and Smoke  
PROJECT LEADER: R. A. Fenner  
PERIOD COVERED: July, 1987

## I. MULTICOMPONENT SMOKE ANALYSIS

- A. Objective: To develop non-invasive analyses of multiple smoke components with simultaneous detection on a puff-by-puff basis.
- B. Results: XModem software has been installed on the Nicolet 160 SX FT-IR data system. This communications software will permit puff-by-puff data to be transferred from the Nicolet system to the VAX 8650. This new software is now being evaluated with the help of CAD.
- C. Plans: Continue with calibrations to permit quantitative puff-by-puff measurements.

## II. SUPPORT ACTIVITIES

- A. Objective: To provide analytical support to programs within R&D and for other departments as required.
- B. Results:
1. Tonka Bean Extract - Capillary GC/FT-IR was used to evaluate a tonka bean extract for Flavor Development. Major peaks identified were coumarin and derivatives thereof.
  2. Evaluation of HP's IRD - A trip was taken to Houston, TX to evaluate Hewlett Packard's GC/FT-IR detector. This dedicated detector system appeared to be exceptionally well designed and of better performance than obtained with our multipurpose Nicolet 60 SC GC/FT-IR system. Combined with HP's MSD, the IRD offers a powerful yet cost effective approach to GC/IR/MS.
- C. References:
- "Evaluation of Hewlett Packard's Dual IR/MS GC System," R. A. Fenner to Dr. R. Cox, July 15, 1987.

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